

## Patent Abstracts of Japan

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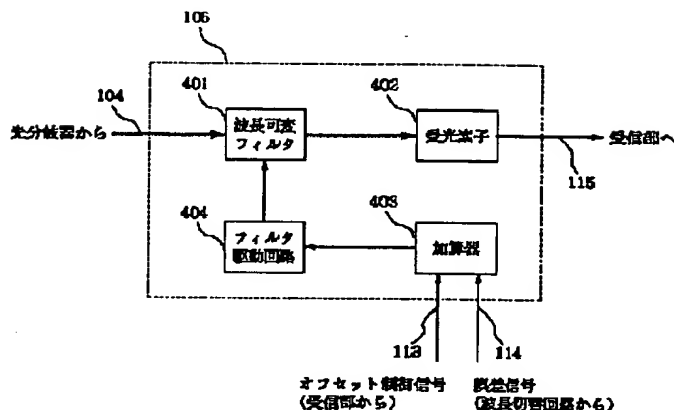
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TITLE : VARIABLE WAVELENGTH FILTER  
CONTROL METHOD, VARIABLE  
WAVELENGTH FILTER CONTROL  
EQUIPMENT, AND OPTICAL  
COMMUNICATION SYSTEM USING  
THE SAME



ABSTRACT : PURPOSE: To eliminate synchronous wavelength fluctuation due to micromodulation, by pulling the center wavelength of a wavelength filter into the wavelength of an optical signal by feedback control, stabilizing the center wavelength, and controlling a variable wavelength filter into which optical signal for receiving is introduced by an error signal.

CONSTITUTION: An optical signal from an optical divider passes an optical waveguide 104, and enters a variable wavelength filter 401. According to a control signal from a filter driving circuit 404, the filter 401 transmits an optical signal having an arbitrary wavelength. A photodetector 402 converts the transmitted light from the variable wavelength filter 401 into an electric signal. An adder 403 adds an offset control signal 113 from a receiving part to an error signal 114 from a wavelength switching circuit, and delivers the obtained signal to the filter driving circuit 404. The injection current to the variable wavelength filter 401 is outputted according to the control signal from the adder. Since the center wavelength  $\lambda_C$  of the variable wavelength filter 401 is not modulated, the intensity fluctuation due to modulation is not generated in the optical signal after filtering.

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